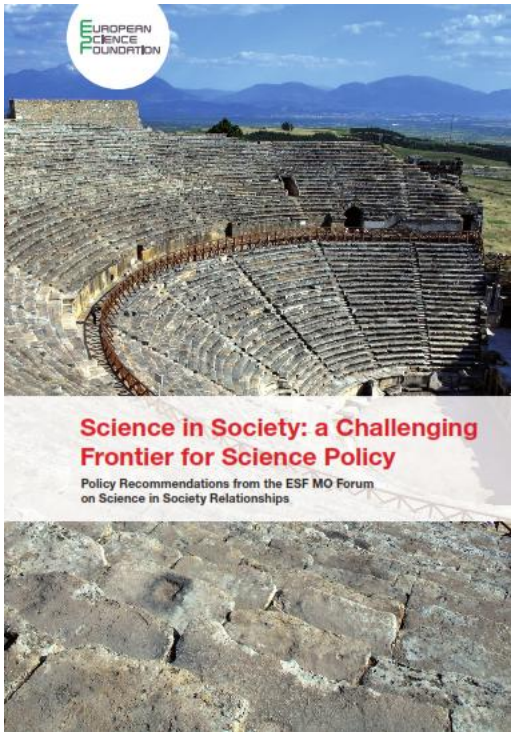

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FOREWORD
and summary of CONCLUSIONS

Is the position of science changing in our society? Society has changed much (and is still changing rapidly) under the influence of Science and technology.
But it seems that, following the endeavour of growth after the Second World War, science now finds itself in an ambiguous situation.
On the one hand, research promises a better future, yet on the other, new criticism arises from many sides and provokes a decrease of trust in science by the public (1).
A consequence of this ambiguous position is the difficulty for democratic regimes to increase their support for science.
This leads to the proposal that a new frontier has emerged for science policy: to include "science in society" (SiS) as a necessary and important component.

This means that research must be respected and protected as a free-minded activity, but also harnessed to help to cope with future challenges, such as smart cities, ageing, renewable energy, care of the environment, development, new modes of transportation, and so forth. We propose that this requires an approach of both *cooperating and keeping the right distance with society* (in a balanced manner).
This proposal, which should be understood in a longterm perspective, reaches beyond the organisations represented by ESF Forum members themselves, and involves other social groups and their bodies across wider society. The Policy Recommendation focuses on the role that research organisations may play in future European society, based on a two-way communication with other principal social actors.

For centuries science has provided knowledge and progress for mankind. When civilisations have been supportive of this human activity, it has led to numerous discoveries and technological advances in antiquity, and in great civilisations such as China, Mesopotomia, Persia and Egypt, until the Renaissance (2).

(1). In most European countries.

(2). This report is not aimed at telling the whole story of science. We ask readers to forgive us for dealing with tens of centuries in so few lines.

Especially in Europe, a new conception of science – the so-called classical science – emerged, based on the ability to predict phenomena effectively. Bacon concluded that "knowledge is power", and Descartes suggested that we "would be as masters of nature" by developing science. The endeavour remains active, and moreover is now proceeding at a rapid pace in many parts of the world.

Scientific activities were first embedded largely in academies. Then, during the 19th and 20th centuries, European societies established a series of new research institutions within and outside universities. Many scientists were progressively employed as professionals. They represent today a real capacity and a strong potential for both understanding and shaping Nature and society.

Over time, and today more than ever, researchers have been expected to address questions that are relevant both to science and to society (such as the European 'challenges' mentioned above). That is the reason why the question of mastering this process (that is, science policy and management) has continued to exercise minds over the decades.

Our research organisations are thus implicated in shaping the world: not only by drawing new maps, but indeed by changing the terrain as well. This is the background for recent diagnoses arguing that the relationships between science and society are shifting – from a segregated model that made it adequate to talk about science **and** society, to a more integrated model that talks about science **in** society.

But despite the great interest in scientific discoveries, culture and philosophy remind us that "science without conscience is the ruin of soul" (3), and open the status and role of science in our society to public debate. Should scientists see themselves as implicated in the defining of grand challenges? This is seen as a prerequisite for becoming part of the solution; being able to grasp how the grand challenges have

relevance 'inside' our research organisation – and not only 'out there' in society.

In previous eras where science was considered as a common good embedded in 'Progress' and 'Future Concepts', the debate remained largely positive in science's favour. Scientific knowledge was supposed to flow into society in a natural and smooth way, bringing progress and benefit along the way. But today the huge trend of investment in research, potentially leading to significant amounts of new knowledge and innovation, sometimes meets opposition.

History tells us that a linear relationship between time and 'progress' is not relevant. So it is with the relationship between science and society. Conflicts are nothing other than normal phenomena, especially in accelerated periods of strong innovation or scientific discovery. We have witnessed a (relative) decrease of trust in science and innovation in many European countries during the last 40 years and this is something that needs to be acknowledged and taken into account. People want to have a say about scientific activity because it partly influences their future. Democracy wants to be more active in science.

There is a need for the active participation of researchers in such a debate. Compared to the past, more opportunities have emerged for discussion about science in society thanks to the recent rapid evolution of modern communication technologies. Studies of science in society have been carried out over the last thirty years, where the values of science were confronted with other sets of values in society.
The time has come to consider their results and to propose that this kind of social activity is undertaken. Although it is different from conventional scientific research, it should nevertheless become a real duty for scientists and their institutions. Classical ethics of science consists essentially of sharing common values between scientists around the world (4). But science is not limited to its own internal process: influencing the world is something that is done by both scientists and societies. So, being aware of the potential consequences of the translation of scientific knowledge in society is part of science's responsibility, a responsibility that is shared with other partners in society.
Translation in this context means the 'migration' of scientific knowledge from its original culture to join other types of knowledge in society. There is no single, simple and linear translation of this type; there are multiple modes of translation, which depend on different elements within society or institutions dedicated to activities within society such as education, economy and innovation, relationship with democratic powers, mass media and the public, and so forth. The constant interaction of scientific knowledge with other cultural activities within society is an important process that enables societies to evolve, and creates new links between society and science. Due to the major growth of scientific activity in the 20th and 21st centuries, the landscape of SiS has changed significantly, and needs to be revisited.

Much is already being done in SiS activities, embedded in cultural and historical conventions, but these activities must be developed further to meet the new challenges arising in Europe and in the world. Each research organisation should develop new SiS activities in its own way, depending on its context and remit.

This report aims to highlight the role of science in society, to raise awareness of how scientific knowledge is translated into society, and to encourage better practice in the relationship between science and society.

In order to achieve a better society and increase the quality of research and innovation, this Member Organisation Forum recommends that the following aspects be taken into account by European Science Foundation Member Organisations (MOs).

(3). Rabelais (1524)

(4). Described as 'communalism', 'universalism', 'disinterestedness' and 'organised skepticism' (CUDOS) by Robert Merton (1973)

CONCLUSIONS

• Quality in SiS activities is needed.

• Clear commitment to SiS in MO science policy and strategy has to be enhanced.

• Transparent SiS processes must be put in place within the organisational structures of MOs and other research funding and performing bodies. SiS processes must also be seen as an essential and central par t of a researcher's work. A cultural change must be encouraged through staff policies, organisational strategies and education of researchers.

• Researchers and research groups must be properly rewarded for their work in this area.

• More experiments concerning instruments, activities and methods should be encouraged. Sharing experience and best practice through networks for exchange within Europe on a regular basis would increase efficiency in SiS.

• Networks to jointly develop systems for indicators, evaluations and measurements are needed. There is a need to coordinate efforts for greater impact. Organisations need the instruments to do this and this involves ensuring that SiS activities are formally evaluated, which is not the case today.